



Serial No. 09/738,309

Reply to the Office Action dated June 21, 2004

Docket No. P-0156

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for allocating channels for radio data calls comprising:
- receiving a data call connection request;
- determining a traffic attribute of the data call;
- determining an occupied bandwidth of each of a plurality of channels of a transmission link occupied by other connected calls; and
- dynamically allocating the data call among the plurality of channels based on the traffic attribute and the occupied bandwidth, wherein a mobile switching system subtracts an occupied channel bandwidth from a maximum allowable channel bandwidth to determine whether there is a minimum available bandwidth in each channel, and allocates the channel having the least occupied bandwidth if no channel has the minimum available bandwidth.
2. (Original) The method of claim 1, wherein a bandwidth of the data call is determined based on the traffic attribute and the bandwidth occupied by the other connected

data calls is determined based on a number of other data calls and prescribed weight values of each of the other data calls.

3. (Original) The method of claim 2, wherein the weight value is allocated in a unit form according to a rate of the bandwidth.

4. (Original) The method of claim 3, wherein a bandwidth of 13Kbps-based low speed data call comprises 1 unit, a bandwidth of 64Kbps-based middle data call comprises 5 units, and a bandwidth of 128Kbps-based high speed data comprises 10 units.

5. (Canceled)

6. (Currently Amended) The method of claim [[5]] 1, wherein the maximum allowable bandwidth is 30 units.

7. (Currently Amended) ~~The method of claim 1~~ A method for allocating channels for radio data calls comprising:

receiving a data call connection request;

determining a traffic attribute of the data call;

determining an occupied bandwidth of each of a plurality of channels of a transmission link occupied by other connected calls; and

dynamically allocating the data call among the plurality of channels based on the traffic attribute and the occupied bandwidth, wherein a mobile switching system allocates a channel having the least available bandwidth if a requested bandwidth of the data call is greater than a prescribed bandwidth and the channel having an available bandwidth exists.

8. (Currently Amended) ~~The method of claim 1~~ A method for allocating channels for radio data calls comprising:

receiving a data call connection request;

determining a traffic attribute of the data call;

determining an occupied bandwidth of each of a plurality of channels of a transmission link occupied by other connected calls; and

dynamically allocating the data call among the plurality of channels based on the traffic attribute and the occupied bandwidth, wherein a mobile switching system allocates a channel having the least occupied bandwidth if a requested bandwidth of the data call is smaller than a prescribed reference bandwidth and the channel having an available bandwidth exists.

9. (Original) The method of claim 1, wherein the traffic attribute is determined based on a service option.

10. (Original) The method of claim 1, wherein the channels are H_0 channels and the transmission link is an E1 link.

11. (Original) A channel allocation method for radio data calls, comprising:
receiving a data call connection request;
allocating an available time slot and an E1 link;
determining a requested bandwidth based on a service option of a received data call;
defining a weight value of the data call in accordance with the requested bandwidth; and
dynamically allocating an H_0 channel on the E1 link based on a number of connected data calls occupying each of a plurality of H_0 channels and the weight value of each connected data call.

12. (Original) The method of claim 11, wherein the requested bandwidth is selected from 13 Kbps, 64Kbps, and 128Kbps according to the service option.

13. (Currently Amended) The method of claim 11, wherein ~~the step of~~ allocating the H_0 channel comprises:

determining whether the requested bandwidth is greater than a reference bandwidth;

computing a bandwidth occupied by the connected data calls;

subtracting the occupied bandwidth from a maximum allowable bandwidth for each H_0 channel, to determine whether any available bandwidth exists in each H_0 channel; and

allocating an H_0 channel having the least occupied bandwidth if no H_0 channel exists.

14. (Original) The method of claim 13, further comprising:

allocating a H_0 channel having the least available bandwidth if the requested bandwidth is greater than the reference bandwidth and a H_0 channel having available bandwidth exists; and

allocating a H_0 channel having the least occupied bandwidth if the requested bandwidth is smaller than the reference bandwidth and a H_0 channel having available bandwidth exists.

15. (Original) The method of claim 13, wherein the weight value is allocated in a unit form according to a rate of the requested bandwidth.

16. (Original) The method according to claim 15, wherein a 13Kbps-based low speed data call comprises 1 unit, a 64Kbps-based middle data call comprises 5 units, and a 128Kbps-based high speed data call comprises 10 units.

17. (Original) The method according to claim 13, wherein the maximum allowable bandwidth is 390Kbps.

18. (Original) A channel allocation method for radio data calls, comprising:
determining a requested bandwidth based on a service option of a data call;
determining whether the requested bandwidth is greater than a reference bandwidth;
analyzing previously connected data calls and a weight value of each previously connected data call to compute a bandwidth occupied by the previously connected data calls;
subtracting the occupied bandwidth from a maximum allowable bandwidth for each of a plurality of channels to determine whether available bandwidth exists in each channel;
and

variably allocating channels from among the plurality of channels according to the availability of a minimum bandwidth.

19. (Currently Amended) The method of claim 18, wherein ~~the step of~~ variably allocating the channels comprises:

allocating the channel having the least occupied bandwidth if no channel exists with minimum bandwidth;

allocating the channel having the least available bandwidth if the requested bandwidth is greater than the reference bandwidth, and a channel having the minimum available bandwidth exists; and

allocating the channel having the least occupied bandwidth if the requested bandwidth is smaller than the reference bandwidth and the channel having the minimum available bandwidth exists.

20. (Original) The method of claim 19, wherein the weight value is allocated in a unit form according to a rate of a bandwidth.

21. (Original) The method of claim 20, wherein the weight unit for a requested bandwidth of 13Kbps-based low speed data call is 1 unit, the weight unit for a requested

bandwidth of 64Kbps-based middle data call is 5 units, and the weight unit for a requested bandwidth of 128Kbps-based high speed data is 10 units.

22. (Currently Amended) The method of claim 21, wherein the maximum allowable bandwidth is 30-unit ~~unit~~ units.

23. (Original) The method of claim 18, wherein the channels are H_0 channels.

24. (Original) The method of claim 18, wherein the maximum allowable bandwidth is 390Kbps.

25. (Original) The method of claim 18, further comprising transmitting the radio data call to an interworking function.